

DRAGON USER



The Independent Dragon magazine

October 1988

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Editorial

I WAS just sitting here thinking what a nice list you/Dragon lot are. I can't think of more than three people I never want to hear from again in all the time I've been sitting at this desk(s). What is it about the Dragon that brings out the best in its type? A lovable personality? Protectiveness? A conviction that there is always one more thing you can do with it? Cheapness? Who knows? I said that Dragon users never in any mysterious way, like God, take it from me, it beats dealing with IBM.

Thanks to the folk who wrote to say that they had substantial collections of OSU, I've expanded on what was an my mind in next month's Letters page. I can't meet someone whose colleague's dad had worked at Dragon Data. He couldn't remember the address. Now I wish he could.

The time has come to say again: don't forget the Show. The Celtic Computer Convention in Weston-super-Mare (Weston-in-Bas as it's known to its natives) on SUNDAY 4th December. Support your show, and it will support you. I'm glad to hear that nearly all the display space is booked out. This must be a good ome.

Pete Gernand is on holiday

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DRAGON PUBLICATIONS

Subscriptions
UK £24 for 12 issues
Overseas (surface) £20 for 12 issues
ISSN 0265-077

Address: Dragon Publications, 48 Rowlands Road, Hounslow, Middlesex TW9 4HP, United Kingdom

Published by Dragon Publications 1988

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Typeset by Artist Limited, London NW1

Printed by Headley Brothers Ltd, Ashford, Kent

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How to submit articles

The quality of the material we can publish in Dragon User each month will, to a very great extent, depend on the quality of the submissions that you can make with your Dragon. The Dragon computer was launched at to the market with a powerful version of Basic, but with very poor documentation.

Articles which are submitted to Dragon User for publication should not be more than 5000 words long. All submissions should be typed. Please leave wide margins and a double space between each line. Paragraphs should, wherever possible, be separated printed on plain white paper and be accompanied by a tape of the program.

We cannot guarantee to return every submitted article or program, so please keep a copy. If you want to have your program in the magazine, must include a stamped addressed envelope.

Letters

This is your chance to air your views — send your tips, compliments and complaints to Letters at Alexandra Road, Hounslow, Middlesex, TW9 4HP

Cure for hiccups

JONATHAN Cartwright tells me that Brian O'Connor has written to you with information about the 'spare hiccups' (Pis. See below) in Utopia. Reference was made to it in the instructions, but what it was and what it did was not entirely clear. Jonathan later explained it to me exactly, but too late for this review.

Because of this a small part of the review is not entirely true: observe the 4th paragraph on page 16 'Should your feet fall below zero ... you will die and be sent back to the beginning of the game'. That's accurate. The game is split into five stages. Once you enter a new stage, you should hear a slight beep. From then, if you are killed, you start at the beginning of the new stage (if you have any lives left). So my statement that it is unfair is not justified.

I do apologise for any inconvenience. The ruling and all other statements will stand.

If you're looking for someone to do the Expert for a month or two, I'm available.

David Johnston
22 Dinkhurst Road
Inverness
IO2 2OT

I hear a small beep ... if I die now, I get to eat my supper again. We are up to date with Autograde Experts, thanks, but if a vacancy arises be sure I will contact you first, the-ooo. Bob is I hope seeing to your other queries. Ho, you aren't asked. Anyone can make a mistake, as the Daren said to the question.

Back to Square Five

It would like to thank Donald Morrison for his excellent review of our latest game (Utopia in DU August 1988, but would like to point out a slight inaccuracy.

Mr. Morrison says: 'the player starts at the beginning

of every month we will be shelling out a game or two, courtesy of our supplier, to the reader's who send the most interesting or entertaining letters. So send us your hints and your opinions, send us your hi-scores and suggestions. Send us your best Dragon stories. What if you think we are, mind readers?'



Today the Dragon...

I own a lot of the Dragon because I knew nothing about computing before I bought it, but I have learned how to program in Basic and Fort, and have gained wide experience of word processors, spreadsheets, databases etc. which has held me in good stead when computers eventually arrived in my office, an advantage which I still hold over my

fellows writers.

I receive reviews of two packages from Computers, DSI+ and Dynastart. Neither of these is new but they are still available and have not even been mentioned by your magazine for a considerable time. They may be of interest to newer readers.

Clive G. Scott, 22illery Meads
Astonabad, Surrey KT21 1SG

These days with 700k you're far towards any other machine worth purchasing, and if you have bothered to exploit your Dragon to the full, even in an unexpanded version, you are discarding a lot of knowledge and experience if you don't maintain it on the sidelines.

Listen, I know a guy who recently paid £150 — I would put that in gold stars for emphasis if I could — £150 for a complete second hand Greenleaf serial 4-track sampling system, complete with Apple 2e, dual disc drives and synth keyboard. OK, the Apple 2e in that form is a dinosaur, but think of the power you have there ... I would have killed him to get it, and I would insist of his colleagues. But there are bargains like that around if you keep your eyes open.

Your ex-Dragon, gentle reader, could be someone else's dream bargain. Think about that twice and hang about ...

One last thing ... I know it's traditional to address editors as Sir, but I've been with DU over two years now, and the only person who calls me Sir is my husband, and he doesn't get away with it.

We're getting a good column of letter this month,

of the game when a life is lost, but in fact the game 'may' be split into five sections, and if you reach a new sector and lose a life, you return to the start of that sector, not the start of the game.

He may have been reviewing a prototype of the game, as this feature was not added until late in the game's development. We agree that when this shortcoming does occur in games it is very annoying, and we asked Jonathan Cartwright to include this feature in Utopia before it was released, just for this reason.

Neil O'Connor
Pulver Software
30 Foxhill
High Charnon
Shrew
GL54 6PW

HA! They're all game-soft ... in my young day you get sent back to the beginning of Asteroid Storm even if you were on your 50th screen. And it wasn't even meant to have 50 screens.

Dynamic Dream

REFERENCE Pam O'Keefe's comments on updating Dream, I have an elderly Dream on cassette. This cassette loads Dream from hex 4C80 (which uses page hex 05 (hex 4800 to 48FF) for control fields. Note that this is the first complete page below hex 4C80.

Page 43 of the booklet that came with the cassette says that Dream is written in position independent code throughout, and so can reside anywhere in the memory map. It also says that it dynamically looks for the first complete page of Ram below itself and sets the Direct Page register (DPR) to point to it. It is a constraint with the hex 4C80 loading. In fact, the booklet is not quite correct. If Dream is loaded from the start of a page (eg hex 0000 or hex 4C00) then Dream skips a complete page. Thus for the examples given it uses page hex 7E (not 7F) and hex 6A (not 6B). Note that page hex 3F is the first

page of Ram under page 00 (which is Ram).

You can see that according to where Chassis loaded, you can get anything from one byte to 256 bytes of free space before the Dream workspace. This is important if you use Address, since Bug needs 128 bytes above the Dream space. If you load Address to start between byte 1 and byte two FF on a page (say hex 6001 to hex 60FF) then if you use `bugspace`, points, you might overwrite Dream. Heavily checked But Dream without Bug is safe.

Ram is correct in her guess about why Dream does search for Dragon 84K. Ram mode. It would be trivial to alter Dream to work for just the 64K mode, but I don't suppose it's worth the trouble.

About pages: Dragon machine code when loading or writing data can either 'use' its page' as one vast sheet, or as a book of pages. In this 'direct' mode the memory included in is 256 'pages' each containing 256 bytes. Both pages and bytes are numbered from 0 to 255 (see PF). The page that the Dragon uses depends on the value (0 to 255) that is loaded in to the DPR.

When in direct (page) mode Dragon needs less bytes of code and runs faster, but I can only access 256 bytes. However, it only takes 12 micro-seconds to change the page.

Dream uses Direct Page when handling its control fields.

And Newman
113 New Har Road
Abbotside
Surrey KT15 2DA

Hack and Poke?

ON the subject of commercial programs, maybe someone could help me with David Maker's Picture Maker? I can get the screen dump to work, but onlines, or on manager, parts of a screen, especially when to show during a colour screen as opposed to a black and white (Pseudo) screen. Also can anybody hack it and give me a poke to put it into Pseudo? I've tried, but only loading program B will touch it, and then it only loads a small program which consists of an On/Off Run and some other incomplete code.

On the subject of the Dragon world (family dragons, 3264 etc.) what about those who only use discs or tapes? Whereas it may be easy

(right), it's not, but keeps coming to convert a program's disc, how can someone who doesn't know anything about discs even attempt to convert one for tape operation? I am of course referring to programs printed in these articles pages.

Some advice for those of you who with Dragon/Catalogues who have 'broken' them in some way or other. The top half of the casing must be prised away from the bottom half to gain access (difficult). Also Maglin (with J805A on P444 of the current catalogue) is a good fit for replacing the fire button ... even if it does tend to melt at 50 watt soldering power!

For those of us who work-process on Peter Whitaker's Microprocessor, pressing <SHIFT> + one of the left-hand keys enables you to jump through your text from CH to CH while in the editing mode. And it is also necessary to clear the glossary when entering any mode. I cannot speak for the glossary, but suspect that these hints are correct for disc users as well. Anyhow, judging from the number of letters of Peter's word processor sheet not published, perhaps we ought to Whitaker's Microprocessor User Group!

By the way, how about selling out robot-covers instead of games for the bestseller of the month? So that serious users can get themselves some more serious utilities?

Gareth Jones
24 Logwell Court
Stanford, Kern
Northridge
AND JTB

NOT a totally silly idea, that. It's back into it. Incidentally, one of the great unsolved mysteries in the history of the Dragon is: what happened to Peter Whitaker? We lost track of him, and it's a pity what way somewhere.

M1009 to HR5?

YOUR Goem in the Dumps article in November 1987 came near to my requirements, but not near enough. I have a Brother HR5 printer. Can anyone tell me how to modify the HPGL program for use with the HPGL? I presume all I need to alter are the EBC codes in EPD to EPBC. Your help would be appreciated.

Keep up the good work.
R F Rowley
Director
Manager
Hobart
Comwell
D12 687

In heaven with Lucifer

I transformed a Dragon 32 since September 1983. In this time good and bad (mostly good) games have been produced. Every so often another game is hailed as the best game ever. Well, it's now time to move the best game ever tag held by *Knightslayer* to its new and rightful place on *Lucifer's Kingdom*.

After recently purchasing this incredible game from Orange Software (they deserve a mention) (Litter, mate, they're so efficient you can miss them.) I loaded the cassette into my Dragon 32 (the family computer) and what it says on the box. How came the family computer and not a dedicated one (a wonder what it should be) You should see the state of my bedroom! On loading *Lucifer's Kingdom* (which is a stupid name for it) you are presented with a screen which I can only describe as XXXX (you may have to put 'very poor') — mostly orange and black characters. Still, you can't judge a book by its cover.

The game starts automatically and you find yourself controlling a hovering, flying thing which flies two miles when you press the left joystick button. The game is in PROCE 4 and is quite honestly the best game I've played. It's fast, smooth, addictive and very frustrating. After hours of play and acting like brain numbs I got to the second of five regions. Only another 20 odd planets to conquer. It was because of July's Dragon User review that I bought the game.

It's reassuring to find the time of the Dragon's life to encounter brilliant software and it's because of this and the continuing quality of Dragon User that I've decided not to trade my Dragon for an Amstrad (spit) and to re-subscribe for another year.

All this praise from a man whose full-time occupation is working with ICL and IBM mainframes. Have you ever tried

writing a shoot-em-up program in C or C++?

D J Platt
402 Winchester Road
Durham-on-Sea
Surrey
SA1 9AT

HAVE you heard of our new publication *DragonTV*? Our first issue will feature a side shoot-em-up where the player simply takes out Saturn and Jupiter. (Only one person can play it)

Hi score corner

I would be very much obliged if you were to print the following message in your magazine. It is about a new *Chuckie Egg* high score ...

Now, before I give you my hi-scores, I would like to say a few things to Andrew Whitman, whose record (unofficial) hi-score of 15,898,888. Well, Andrew, you have been beaten in to a SMALL, second! My hi-score on *Chuckie Egg* was around 12,000,000, well, well, well, it was 15,898,888! Or was it 294,785,205? Or was it 358,802,888? No! I must have been 714,732,308! I lost count of the level, but according to Andrew's score sheet, it must have been about 38,988.

Mark Haragan (age 15)
2, Chelmsford
Higginbotham
Bucks HP18 9SL

PS If anyone beats my score, **WROGH OUT!**

SMELLS fishy to me, this ... he says he's 15, but his spelling's better than mine and, according to my calculations, he has spent approximately 73 years obsessively playing *Chuckie Egg* ... Is he (a) Dr Patrick Moore (b) Professor Sir Randolph Blake (c) Dr Isaac Asimov? Answers on a postcard, please, along with your current top five software titles, to the usual address. You guessed it, I'm thinking of reviving the *People's Chart* — probably on an irregular basis (give the new product more time to hit the streets). Why should *Chuckie Egg* have all the fun?



New and converted from Dragonfire

DRAGONFIRE Services have introduced a number of The Tape Doctor cassettes, which were published by Compsoft, for the Tandy CoCo/Dyn/DTC. These programs, which helps users recover lost files from tape, received a five-Dragon review in Dragon User and have been released. Priced £4.00 plus P&P the tapes have colour covers and are available while stocks last only.

New from Dragonfire is an adventure called *Hole by H E Hemmings*. Your ship is wrecked into the infamous Black Hole. What happens next is up to you. priced £3.00 plus P&P.

New from the Printer Prompt N, Dragonfire's 'ultrafast bit type writer' program, compatible with DragonDOS and CumanaDOS 2.0. The price is

£8.00 as for the tape version. The program has a 64-character screen display, is menu-driven and is compatible with Epsom and Epson-type printers.

Dragonfire is currently converting many of its programs to disc. Initially for DragonDOS and CumanaDOS, Dragonfire would like to hear from users interested in conversions to DataDOS so that they can assess demand.

The company is working on a major addition to its list for the Colour Computer Convention in December.

For more information please send stamped SAE to Dragonfire Services, 10 Perry James Close, Stearn, Gwent NP23 5BH. Postage is 50p per tape UK, £1.25 overseas.

Lee goes American

Gordon Lee's competition page featured through 'Winners and Losers' is the July 1988 edition of Scientific American when Gordon issued to readers of that August journal the challenge he issued to us in the July 1988 WEL - to construct a square of 6 by 6 digits which contained more than 100 prime numbers.

The Computer Recreations column offered some tips for constructing such a square, and offered to print any solutions which beat Gordon's.

We await the outcome, if anybody out there cracks it — tell SA, as well as us, and tell them where you come from! We await the outcome.

Update to date

THE July 1988 edition of Dragon Update, the Newsletter of the National Dragon Users Group, contains a report from the Oasist Show, reviews of Luffier's Kingdom and Utopia, a look at the CoCo 3, news, programming articles, and two appeals: one for local area members to run the NDUUG mail at the Weston Super Mare show in December, and the

other for somebody to help Paul Grade get a backup photocopies from Lincolnton to Welling.

The National Dragon Users Group is a user group offering technical assistance, a forum for Dragon and Tandy users and 12 newsletters a year. For information write to Paul Grade, 6 Hanning Road, Welling, Sussex.

H C Anderson list

H.C. Anderson has published a new productivity list for the Dragon which is available from them at Englewood 380, DK-2770 Keston, Denmark. The list is a 10-page A6 booklet and includes hardware and disc, upgrade kits, spare parts, CG-6 and Free software,

games and utilities.

HCA are the European licensees for CG-6. Prices in the English-language list are quoted as 'ex' or 'incl' (includes about VAT and courier duties should be addressed to HCA).

New Era expands

Simon Jones's New Era Publications are releasing two booklet guides to Dragon products and suppliers. The Dragon User's Handbook details every consumable currently available for the Dragon (and every computer user genuinely supporting the Dragon) according to Jones, who adds that they believe this will help in the fight against piracy by identifying software available legitimately. The price is £1.95. The Dragon Directory is a bi-monthly update which is aimed at keeping users in contact with other users/companies (and) will

detail any new software which has been released prior to publication of the directory. The price is £4.95 for two year subscriptions. New Era's present subscribers are entitled to a discount of approximately 15% on both booklets.

New Era has recently taken over the list (published) of Unique Software, who were publishing Dragon software in 1984, and hope to revive other deleted software in the future.

Inquiries to New Era Publications, c/o Simon Jones, 27 Cuttes, Meadon, Hareley, Essex CM19 4EM

Orange across the Sea

Orange Software is releasing an adventure by Gail Howland, North Sea Action.

This is a sea-man type game in which the player sends a drill down below the North Sea in search of oil and all drama. Not the most intellectually testing game, but it

has that 'one more try' quality says Graham Smith of Orange.

Orange's brochure is now a nice little A5 booklet. Write to Orange Software, The Quatt, Start Road, Nant-y-Berry, Abergavenny, Gwent NP23 5DP for information.

Starship rolls again

THE next release from Starship Software will be impossible, featuring full colour perspective graphics, music and digitised speech. The game is being finished and more details will be released shortly.

Impossible will be published by Pulse Software on cassette or DragonDOS disc for the same price. Pulse are

also planning a new text adventure, a new self-defensive database program, and a computer aided design program, CAD 9800 (probably priced at £19.99 in September).

Discounts of around 10% on many of their other programs will be available. Inquiries to Pulse Software, 26 Foxhill, High Compton, Gwent, Gwent NP23 7HG.

Dragonsword!

Paul Grade gets his inspiration from a fruit.

HEARD about the new Official Secrets Act yet? Don't worry, it isn't likely to apply to anything you're likely to write in your Dragon, at least not unless you're really working for MI6 and trying to discover the inside secrets of Dragon User.

A lot of programmers appear to imagine that whatever they write is an Official Secret, especially in the Dragon world (Not just the Dragon world) since your Editor-adding-and-spending-more-on-writing-protection-routines than they do writing programs. What's all this about? Well, I'm getting a little tired of hearing gush about the Dragoned Peoples who spend all their time copying programs and passing them around, thus depriving poor hard-working programmers of thousands of sales. It may well have been true once, and there are still a few morons around who imagine that buying one copy of a program (other than the people it is a good idea, but if someone is really determined to break into protected programs they will, so what on Earth's the point of writing all these elaborate routines? Personally I was always told that the first thing one should do when buying a disc or tape was make a backup copy and keep the original in case of accident. That makes a lot of sense to me, and I'll have to spend several hours fiddling about before I can make a backup copy of a program then I'm simply not going to buy anything in the first place. I don't care how good a program may be, or what a bargain it is. I assume the right to be silent is make a backup copy, and if this involves having to break a protection routine then I refuse to buy it.

The whole thing is ridiculous. I KNOW sales are low now, but that has nothing to do with 'pirates'. It's simply that there are a lot fewer Dragon owners now than there were, and those that remain tend to be more interested in using their machines than running the latest games software. When the programming world realised this we might get software, and more to the point they might even get a few more sales.

As well as the Dragon (which is said to be a very nice Apple 2+), which as you will probably know is an equally antiquated machine, but has the advantage of an established business and educational user base and tends to be more good quality software than is available in Dragon owners. The programs aren't cheap, about eight times the price of Dragon software, for all you price-complainers, but very few of them are protected anyway, and to be fair to those few that are there is a large selection of commercial copying programs. Almost every Apple disc, regardless of source, contains an instruction to make a backup and NOT use the original, and several times three in a batch of freebie programs and routines as well as

the main program, plus summaries of forthcoming releases. When was the last time you found anything like that from a Dragon software firm? It is a much better attitude, and has to be more attractive to potential customers than the paranoia about 'pirates'.

I am not defending the real pirates, those people who copy a program, change a couple of lines and then try to market it as 'original work'. That isn't just piracy, it is also theft, and there is no excuse at all for it. Likewise, I hold no brief for 'software librarians' who make copies of commercial software and then sell it in order to make a profit. The harder these types get jumped on, the better, but actual sales losses through private copying are minimal, and I think are probably no greater than sales lost through over-protectionism. Anyone selling the copies of a program in the first six months is doing as well as can be expected now. The market just isn't there any more, and more to the point, Dragon users generally now know a lot more about their machines than in the 'Good Old Days', and are quite capable of writing simple programs for themselves, which means that commercial programs have to be good in order to sell at all.

I'm not having a go at programmers. Generally they do their best to provide good material at reasonable prices, and certainly more of them are going to perish as a result. But a few of them just refuse to believe that there is a limited market, and that games sales are so low that they'll be lucky to cover the cost of the listing paper they used in writing the program. Earning money is self-delusion. Those of us left need the software, and are willing to buy it. There is still a market, but it isn't big enough for anyone to make a profit from, so what's the point in keeping it alive?

If anyone thinks I spend all my time complaining, they're wrong. I never spend more than 70% of my time away, but you want to know why. By starting a user group or a magazine. Well over half the letters that come in contain at least one complaint about something, or about usually things over which I have no influence at all, and the last of 'Why doesn't someone market some published software' etc. would be a case in point. (Now that's an idea Boris Lady hasn't thought of yet. I think, as an editor of a magazine can you mean? I thought the Ladies Page was for enough, but now you mention it... I AM!) I am really doing it to replace a few of the comments and what's to you, hopefully to action, but failing that a few solutions would help. Of course I add a few questions and comments of my own, but I'd be a fool to miss the chance, wouldn't I?

On the subject of questions, there's one I really must ask. I may not be the most sophisticated in the meaning of life, the

Universe, and Everything (and anyway we all know the answer to that one), but it is a question which has caused generations of Editors and writers to leave their marks in the wallpaper and increase the value of Clackers Company shares by several thousand percent. Is there anyone out there? Personally I don't believe that any of you are there at all, you're just something out of a very prolonged dream, but if there really is life on the other side of the keyboard just knock three times for yes, twice for no. Inasmuch there really was intelligent life out there why would I get letters telling me that the writer has been a subscriber to Dragon User for several years but has only just heard about the National Dragon Users Group, from a friend? Why would I get letters from Group members asking me if Dragon User still exists? I've been giving User mentions in Update for years now, and at one stage even carrying User advertising and subscription forms. Dragon User has been mentioning the Group in almost every issue for about the same length of time, so is there really someone out there reading this, or are you all a computer malfunction? (But why are you, while sending in the subscription cheques and the latest haul of questions I can't answer?)

Enough of this rubbish. I'm being paid eventually. I hope to write serious, and probably interesting material for this prestigious magazine! I know they are ill-equipped because I read Peter Conrad's page two, so I can learn all about how to do deals with little very handy if it happens to get stuck in a Scandinavian myth, fairly (and in a couple of pubs I know), wizards (are they the ones responsible for sunny spells), and similar everyday phenomena. These I don't understand though is why Peter's regular readership are so hooked on the now traditional Adventure genre. Britain has a lot to answer for, I know, but surely someone could break out of the pattern? How about an Adventure program based on parking a car in London or Brighton? The hazards make more sense and demands seem positively benign. Or how about one for all ex-Active and Rugby Club members, based on the Story of Elaine White? Do you must have a vision? Try writing Spell-Casting Utility with a special sub-menu for putting curses on people who offend. Of course, there's a slight snag with that one. It's not really a utility, it could result in several people I can think of having to log rapidly to the newspaper, and our illustrious Editor might have a harder time than usual parking her becomatoc (Pleasure / ride a / sex /) but who cares? Let's have a bit more variety. Please?

Come back, Compusense!

Program: Edit +

Supplier: Compusense, PO Box 166, Green Lane, Palmers Green, London N13 5TH
Price: Unknown. Cartridge or disc.

This product comprises the screen utility Hives, which is also available on its own and Edit +, a full screen editor for Basic programs.

Hives uses a special character set to produce a 31 x 24 text display on a mode-4 screen. The display, which is similar to that of the word processor Fastcenter, can be displayed in black text on green or built backgrounds or the reverse.

APPEND 1 (inplace of the normal PRINT @ command), which can still be used for a 32 x 18 display, gives access to all 1224 print positions. Various foreign character sets can be selected by extensions to the CLS command. Text can be freely mixed with graphics. Hives is not as versatile as Rainbow Writer and when combined with Fast+ consumes considerably more memory, but it is worth it for the screen editor which is a vast improvement over the Dragon line editor. Type EDIT and the screen will clear and any Basic program in memory will be displayed.

The CLEAR key is used in combination with other keys to select the various options of

the program. AutoRepeat is implemented for easier movement around the screen, which is by means of the cursor keys. The screen utilizes a word processor will not scroll when the cursor reaches the bottom of the screen but it can go up or down to scroll at a fixed 8 can jump to a specified line.

The default mode is over-underline although underline can be selected if will return to over-underline when an alteration is confirmed by pressing ENTER. Inserting into a line can be done by typing to extend the line first. If too much text is entered into a line it will beep and show an overflow marker. New lines can be added or old lines deleted.

Characters can be deleted individually at the cursor or from the cursor to the end of the line. Single or blocks of lines can be copied by placing markers and inserting into the required place in the program or moved by deleting the old block after the copy has been made. Markers will return to further copies and removal.

The program can be searched for a specified string of characters or characters selectively replaced by an alternative string. This is ideal for changing variable names.

This covers the main features of the program which I find indispensable when developing programs. This is a must for the serious programmer.

Clive G. Scott



Program: Dynafast

Supplier: Compusense, PO Box 166, Green Lane, Palmers Green, London N13 5TH
Price: Unknown. Cartridge or disc.

Dynafast comprises three programs: Dynafast, a Basic compiler, Dynamite, a program compiler and Dynafast, a cross reference utility all selectable from an opening menu.

Dynafast compiles a basic program into a mixture of machine code and Basic, which, while not as efficient as a program written in assembler, runs much faster than a Basic program.

To gain the maximum speed advantage all integer variables should be declared at the start of the program by naming the variables and the location in memory for them to be placed in: DIM A\$(65536) B(0).

There are four alternative modes of compilation: Normal, Fast, Step and Print. Normal mode will display the progress of the compilation but slowed down so that it can be read. Fast processes it as fast as possible. Print directs all output to the printer while Step mode will step through each variable line is processed.

Compilation is done in 3 passes. Pass 1 displays the integer variables that have been declared. Pass 2 processes each line and indicated whether it was able to fully or partially compile the line and Pass 3 is a tidying up process. Compilation can be paused or

aborted any time.

The compiled program can be automatically saved under a specified name but the \$NAME, \$END and \$EXEC addresses are displayed at the end of compilation and can be noted for future reference. The compiled program can now be run by typing EXEC.

Dynamite compacts a program in three passes by first deleting all redundant characters and spaces, secondly deleting all unnecessary REMs and finally condensing as many lines as possible into one long line.

In all three programs a progress report is displayed as each line is processed.

It is advisable that the compiled program be saved under a different name because it can be difficult to read and edit.

Dynafast runs through your Basic programs and produces a table of all variables and constants together with the address they appear on which can be output to the screen or printer. The table can be restricted by setting limits in the EXEC statement in EXEC A2 will only produce a table of Basic variables.

It is invaluable for checking the variables that have been declared, particularly when modifying a program prior to compilation by Dynafast. This is a list of programs which will complement any user's collection of programming aids.

Clive G. Scott



Oranges and cream in Lucifer's land

Program: Lucifer's Kingdom
Supplier: Orange Software, The Girth, Star Road, Nant-Y-Derry, Aberystwyth, Gwynedd NP23 5BP
Price: £5.95 plus 50p postage

It's been a couple of months since I've got round to writing a review but at least now that the ink is flowing again I've got something to rave about.

Orange Software are the company providing the 'luscious' item. It's only a few months since they appeared

on the market but now they have a comprehensive list of titles, old and new, largely made up of text adventures. Lucifer's Kingdom is an arcade adventure so it's perhaps unfair to compare it with the majority of their titles but I would say it's undoubtedly the cream of their produce.

The Kingdom of Lucifer is set deep in space in the bowels of the earth as may be expected but the obvious idea of exterminating the old devil is stifled. The way to do this is

to fight your way to him by shooting down hordes of enemy vessels which speed down the screen, you the foe come in various guises, some that you can dodge and forget, some that track you, some that move vertically down the screen and others that zig-zag. Whichever they are you must know what's going to come next and how many others.

So far it sounds like a simple shoot-everything-in-sight type game. There is however a lot more to come than that. Firstly,

you have to collect crystals (not simply a matter of flying over them but shooting at flashing 'C' characters and gradually revealing them. This is not just to gather bonus points as in most games but a necessary part of the proceedings, because if you don't collect them you have to go back once the region is completed.

A region in this game is a set of several planets, completing a phase as, say, in

continued on page 6

DragonDOS Toolkit

D.J. Gray adapts the Premier Microsystems program for DragonDOS

FOR many people Premier Microsystems' *ToolKit* used in conjunction with the Delta Data controller has been a very useful addition to the Dragon's facilities. *ToolKit* was designed to work with a Dragon 32 and a Delta DOS disc controller which was capable of containing an extra 512Kb of memory holding the *ToolKit* Editor. Those people who moved to a Dragon 64 would have found that their parallel printer did not work when *ToolKit* was activated and those who moved to Dragon or Super DOS found that they could not install their *ToolKit* Editor.

The instruction manual supplied with *ToolKit* states that it cannot function correctly with Dragon Data's disc system as DragonDOS rather inconveniently takes the current video screen as a work area, thus defeating *ToolKit*, also that the Dragon Data disc cartridge contains no extra 512Kb space for *ToolKit* to reside.

Those statements provide quite a challenge but it has been found possible to use a Dragon 64's extra Ram to hold *ToolKit* and with a DragonDOS cartridge attached make *ToolKit* operate. The problems to overcome were:

- 1) To obtain a copy of *ToolKit* that can be read into a Dragon 64's memory
- 2) How to convert the extra 32K of Ram of a 64 in order to store *ToolKit* in the correct position
- 3) *ToolKit* contains a self destruct routine that is activated if it is held in Ram; this has to be defeated.
- 4) *ToolKit* contains command words that are identical to some within DragonDOS; these have to be changed to prevent confusion.
- 5) How can *ToolKit* be modified to prevent it overwriting areas occupied by DragonDOS when using the *CLS*, *FRAME* and *MOVE* commands.
- 6) How can the system be modified to allow a parallel printer to be used when *ToolKit* is used with a 64.

ToolKit when installed in conjunction with DeltaDOS resides in memory between 40000 and 4000F. This can be copied onto tape by using *COAPEM* "TOOLKIT" 40000,4000F,40000.

This copy can be used later to place *ToolKit* into the Ram of a 64.

Extra Ram

To gain control over the extra Ram in a 64 with a DragonDOS cartridge attached is quite straightforward (remember that it is not 64 words that is wanted, only access to the extra Ram). Using one of the routines that simply reads the information stored in Ram (Basic) and the DragonDOS cartridge then places it into Ram. This routine also modifies the *RESET* to ensure that if *RESET* is pressed then the system will not return to 32 mode. Later this routine is

LISTING 1

```

10 : REM *****
20 : REM *** LOADER TO PUT ROM AND DOS INTO ***
30 : REM ***          RAM OF A DRAGON 64          ***
40 : REM *****
50 : FOR I=40000 TO 4000F
60 :   FOR J=40000 TO 4000F
70 :     READ A$
80 :     POKE I,JVAL I*256+A$
90 :   NEXT J
100 : NEXT I
110 :
120 :
130 DATA 0E,00,00,1A,50,07,FF,0E,A4,04
140 DATA 07,FF,0F,A7,00,0C,0F,FF,25,F1
150 DATA 30,0C,1D
160 DATA 10,0C,03,CB,A4,00,A7,A0
170 DATA 10,0C,03,FC,25,FA,10,00,03,EB
180 DATA 10,0F,72,0A,21,07,0E,CB,1C,AF
190 DATA 39
200 DATA 12,07,FF,0F,7E,C7,06

```

***** LISTING 2 *****
 40000 : 320
 40001 : 320
 40002 : 320

```

4020 *****
4030 * ASSEMBLY LISTING TO TURN ON *
4040 * EXTRA 32K OF RAM AND MOVE *
4050 * ROM AND DOS INTO RAM      *
4060 *****
4070 ORG 20000
4080 PUT 20000
4090 GSTART LDX 00000
4100 LDCC 0000
4110 LOOP1 STA 0FF0E
4120 LDA ,X
4130 STA 0FF0F
4140 STA ,X+
4150 CMPL 000FF
4160 BCS LOOP1
4170 LEAK RESET,FCR
4180 LDY 0000B
4190 LDA ,X+
4200 STA ,Y+
4210 CMPL 000FC
4220 BCS LOOP2
4230 LDY 0000B
4240 STY 00072
4250 LDA 0001
4260 STA 000C5
4270 ANDCC 00AF
4280 RTS
4290 NOP
4300 STA 0FF0F
4310 JMP 0C706
4320

```

modified to overcome problem number 8 and to automatically call Toolkits startup.

When called the routine in Listing one switches the bit into all RAM mode. Toolkit can be stored directly into RAM using the tape previously prepared simply CLORDM "TOOLKIT". No offset is required. Do not be tempted to ERASE if this is the way you will only have to start again.

Toolkit's self-destruct routine can now be disabled. Listing two lines 50 to 180 overwrite the destruct routine with No Operation instructions (NOP) and a final Branch Always (BAA).

Toolkit contains some command words that are identical to words used by DragonDOS. To ensure that there is no confusion some minor modifications can be made. The simple rule I have used is to change the second letter of the conflicting words in Toolkit to 'T'. Any other alternative can be made to personal choice. Listing two lines 180 to 220 make the following changes to command words:

AUTO becomes ADTO
 BPPCH becomes BDPCH
 BEEP becomes BDEP
 ERH becomes EDR
 EPL becomes EDL
 FREE becomes FDESS

Toolkit uses the area allocated to graphics to store pages 1 and above. DragonDOS has however moved the position of these graphics areas so to overcome this there is a danger of overwriting DragonDOS. To avoid this it is necessary to add two patches to Toolkit that modify the commands MOVE, FRAMES and CLS. These patches are inserted using listing two, lines 230 to 290. The first patch for FRAMES and MOVES is stored between &HFA05 and &HFA0F. These patches are called by inserting two Long Branch to Subroutine commands at &HE265 and &HE26A. These branches are inserted in listing two lines 308 to 310.

Having added the patches and made the modifications it is now possible to save all the coding to disk by SAVE "TOOLKIT.UTY" &H4000,&HFA0F,&H4000. The file "TOOLKIT.UTY" is used later in listing three as the title of the program to be autostart.

The problem with a parallel printer, Dragon 64 and Toolkit is that Toolkit uses a part of RAM that a Dragon 64 looks at to determine if it is to use the serial port or the parallel port. This looks a Dragon 64 into believing it is required to send messages to the serial port when asked to output to a printer. The startup routine modifies the check bit is set now in RAM, unfortunately though this also disables the serial port.

The final listing number three is a patch for listing one. It allows listing one to be modified so that when RUN is selected in Ram mode, modifies the print routine and LOADs and RUNs the program "TOOLKIT.UTY". The patch is carried out by saving listing one to disc (you must use the same line numbers as the listing), SAVE the patches disc (make sure the line numbers are the same as listing three), then MBR followed by LOAD "Listing 1"

LISTING 2

```

10 REM #####
20 REM 444 TOOLKIT MOBS ***
30 : REM #####
40 : REM 44 DISGABLE SELF DESTRUCT 99
50 : REM #####
60 : FOR I=0 TO 3
70 : POKE &HE482+I,&H12
80 : NEXT
90 : POKE &HE48A,&H28
100 :
110 :
120 : REM #####
130 : REM 44 CHANGE COMMAND WORDS 99
140 : REM #####
150 : POKE &HE1E5,&H44
160 : POKE &HE281,&H44
170 : POKE &HE228,&H44
180 : POKE &HE25C,&H44
190 : POKE &HE26F,&H44
200 : POKE &HE247,&H44
210 :
220 : REM #####
230 : REM 44 ADD THE PATCHES 99
240 : REM #####
250 : FOR I=&HFA05 TO &HFA0F
260 : READ A#
270 : POKE I,&H1+&H1+&A#
280 : NEXT I
290 : FOR I=0 TO 2
300 : READ A#
310 : POKE &HE265+I,&H1+&H1+&A#
320 : NEXT I
330 : FOR I=0 TO 2
340 : READ A#
350 : POKE &HE25A+I,&H1+&H1+&A#
360 : NEXT I
370 :
380 : END
390 :
400 DATA 34,83,FE,83,FE,A4,48,37,84,88
410 DATA 83,A7,48,A4,49,37,84,88,83,A7
420 DATA 4F,A4,4A,37,84,88,83,A7,4A,35
430 DATA 82,38,8F,FE,88,3F,39
440 DATA 81,88,27,83,C3,86,88,C3,85,88,3F
450 DATA 17,14,78,17,14,AC

```

LISTING 3

```

40 : REM 444 AND PATCH TO AUTO RUN TOOLKIT 99
50 : FOR I=&HE428 TO &HE42F
100 DATA 38,8C,3A
100 DATA 84,33,38,8C,8C,9F,A4,7E,81,94
210 DATA 22,34,4F,4F,4C,48,4F,54,28,53,54,59,
22,88

```


PLAYBABY

Bernice Hennessy's computer answers back to the offshoot

At the early days of the Dragon, some four or five years ago, there were a great many trivial programs around, both on sale in bookshops and published in the magazine. Since then the standard has improved very greatly — if you look at last year's Dragon User there are some very good utility programs and a number of machine code games, but very little trivia. The only problem is that there is still a requirement for a certain amount of trivia. This program seeks to redress the balance. It is aimed at the 2-4 year old toddler who annoys its older brothers and sisters by pressing a random key just as they were about to say that last alien and go to the top of the high score table.

Blackwell, the company has now come

any key at random and get a response. If you are slightly more sensitive you get a more interesting response. When a numerical key is pressed, the corresponding number of arguments they should have been called for is used to be more interesting (as shown on the screen) and a loop made for each one (Figure one). If any key is pressed a twinkling star is displayed on the screen and Twinkle Twinkle Little Star is played (Figure two). If any other key is pressed a random sound is made and the screen cleared to a random colour with the exception discussed in the article.

The program itself is fairly trivial and needs little description as the listing is well commented and there is a flow diagram in Figure 3(a). The only point of note is that

the BREAK key has been disabled by the "dirty" technique described in June 83 Dragon User. This works for this program but could have disastrous effects on some other programs so it is probably safer to switch OFF and ON again after running BreakOut.

Anyway there it is, a toddlers' introduction to computers; it will keep them quiet for at least a quarter of an hour, teach them that if you press the right key it will do what you want and also to count to 8. It's a fairly short, simple program to type in, but if you want a copy and are too lazy to type it yourself, I'll send you a copy in return for £2.25 addressed to Bernice Harcourt, 8 Towner St, Elsworth, Northampton NN4 5BN.

[illegible][illegible]


```

1110 'A
1120 IF [A]=0 THEN SOUND$=0 ELSE IF A
ALL[10]=0 THEN SOUND$=0 ELSE SOUND$=0
1130 GOTO 1030
1200 'A
1210 SET SET ANGLE SCREEN COLOUR,PRINT
CHARACTER,IF POSSIBLE, AND MAKE SURE OF
PENDING ON CHARACTER
1220 'A
1230 CLR SCREEN-1
1240 PRINT@0,0,0,0
1250 IF SCREEN(1,2)=0 THEN AT,0
1260 RETURN
1300 'A
1310 SET AUDIOIC KEY PAPER, BUT NOT THE
0.
1320 SET GO HYPERMATIC HANDED OF SOUNDS
AND SOUND JAGGERS, USING BUFF SCREEN AND
DRONE JAGGERS.
1330 'A
1340 PPODE 0,1
1350 COLDERS PCLS
1360 SCREEN 1,1
1370 AND PPODE
1380 SET A,T ARE USED TO POSITION JAGGER
1390 PPODE,0,0,0
1400 FOR J=0 TO 0
1410 SOUND 0,0,0
1420 SA=STRA(1) :SA=STRA(2)
1430 'A
1440 SET DRUM JAGGER OUTLINE
1450 'A
1460 DRUM "00000000", "00000000"
1470 SET DRUM 0,0

```

Crossword

Please get your answers in to Dragon User Crossword Department by the end of the month on the front cover

The eleventh Dragon Crossword rolls crisply out of a neat white envelope, dressed to kill, and regards — the ninth Dragon Crossword, as it crawls demurely from under a pile of slowly-rotting press releases. "Don't worry, old chap," it snaps briskly, "the Editor will get around to throwing that lot away soon. You'd better freshen up, because D.O. Duns of Armagh has written to tell you that he would like a Quickbeam game, any Quickbeam game, and Patricia Hilt of Surrey (an old friend of yours) is looking for an adventure of some sort. It's a good life out here, you know."

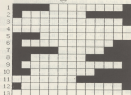
"Ha!" mutters the old Crossword. "You wait till this time next month."

The phrase is **WIRE'S GUMPH-ACCS**.

There will be a couple of free tapes from the Editor's Magic Bottomless Box for the first correct entries out of the hat each month. You can try telling us which tapes you'd like — we may have them.

1. Dr. Who's a famous one, so time-travel around. (6)
2. Nail the globe — Tommy was a wizard at it. (7)
3. Air speed cars make unfriendly aliens. (5,7)
4. Do call in at six to find adventure. (7,8)
5. First recipe for grand price? (7,9)
6. It's a red tiger was made about his daily log. (10,11)
7. Martial art of Grasshopper? (4,7)
8. First one said, smart jewel that revealed.
9. Learner in log, but knows things over. (7)
10. Dealing is a jobber's task, says "faster". (5,1,3)
11. Submarine captain might say it to have a look. (2,8)
12. Are rush takers troubled by big fish riches? (5,8)

All this month's answers are names of Dragon software. When the crossword is complete, the column marked with an arrow will spell out a phrase.



Music Catalogue

Anthony Daniels' database has records but yours could have recipes

THE value of writing your own programs is that they can be made to do exactly what you want, whereas any professional software has to cater for many different needs. All my family play in orchestras and we need to keep an extensive library of music ourselves and sometimes we like printed music and so we have a catalogue and quick reference system on computer. Professional databases tend to talk about defining fields and being generally obscure and abstract. My program requires none of this preliminary business. It operates in a number of short sections which will List, Edit, Store, Sort or permit Analysis, and every entry is stored in a

single string which, although limiting its length makes handling really easier. One can apply the techniques demonstrated to all sorts of things so I trust it will prove interesting.

The menu is stated in lines 70-170. The first task is to make up the catalogue and this is done with the command LIST. The first heading is Compose. If you press LIST/Posibly you will get the same name as on the previous entry and this applies throughout this section. If you wish to leave this section input '0'. To advance to the next entry press 'N' or long back press either 'C' or 'T', the former will clear the previous entries, the latter will preserve them.

Next in this section comes the type of piece. I have included a shorthand here. If the right hand character of the entry is a 'Y' it will be read as Symphony, an 'X' will be read as Sonata and a 'Z' as Concerto. If the word you are writing ends in one of these letters then just add an extra space after it. Having used the shorthand you move on to a further input which allows you to enter the number or key (Use D for D major or E-flat minor). If you wish to enter both a number and key then type it in longhand. In all these entries avoid the use of commas otherwise the disk drive may read them as end of string markers.

5 "FIRST ENGLISH BY A. DANIEL, 22/11/87"

10 CLEAR:0000

20 ENTER Software: "OPTIONAL, UNDER FWP - ONLY AVAILABLE WITH EDITABLE SOFTWARE 01.0 SUPERBOWL"

30 ENTER COM: "010000-010000"

40 ENTER:0000

50 W=000000

60 CLEAR: PROMPT: "ENTER/ENTER OK TO ADD: NEW"

70 CLEAR: PROMPT: "Name - Genre - List - Sort"

80 PROMPT: "Analysis - Sort/PROFESSOR" (PRESS ANY/ANY LETTER "PRINT/PRINT" PRESS "I" TO CLEAR CURRENT FILE)

90 TERMINATION OF "NEW" THEN 10

100 IF "N" THEN GOTO 170

110 IF "T" THEN GOTO 140

120 IF "C" THEN GOTO 140

130 IF "Y" THEN GOTO 140

140 IF "N" THEN GOTO 170

150 IF "T" THEN GOTO 140

160 IF "C" THEN GOTO 140

170 GOTO 10

180 CLEAR:0000

190 IF "N" THEN GOTO 170

200 GOTO 170

210 PROMPT: "ENTER/ENTER OK TO ADD: NEW"

220 IF "N" THEN GOTO 170

230 IF "T" THEN GOTO 140

240 IF "C" THEN GOTO 140

250 IF "Y" THEN GOTO 140

260 IF "N" THEN GOTO 170

270 IF "T" THEN GOTO 140

280 IF "C" THEN GOTO 140

290 IF "Y" THEN GOTO 140

300 IF "N" THEN GOTO 170

310 IF "T" THEN GOTO 140

320 IF "C" THEN GOTO 140

330 IF "Y" THEN GOTO 140

340 IF "N" THEN GOTO 170

350 IF "T" THEN GOTO 140

360 IF "C" THEN GOTO 140

370 IF "Y" THEN GOTO 140

380 IF "N" THEN GOTO 170

390 IF "T" THEN GOTO 140

400 IF "C" THEN GOTO 140

410 IF "Y" THEN GOTO 140

420 IF "N" THEN GOTO 170

430 IF "T" THEN GOTO 140

440 IF "C" THEN GOTO 140

450 IF "Y" THEN GOTO 140

460 IF "N" THEN GOTO 170

470 IF "T" THEN GOTO 140

480 IF "C" THEN GOTO 140

490 IF "Y" THEN GOTO 140

500 IF "N" THEN GOTO 170

Finally enter the reference. The first letter must be C for Cassette, R for record or P for printed music—do it of course your own letters. Anything can be like them but you will not be able to make another entry unless one of these letters is entered. If you have made a menu up and wish to add the entry completely enter Y.

Having made the list, you need to WRITE it onto the disc. Of course you can enter a single file on cassette but searching for multiple files on cassette is rather a problem, and the analysis section which provides the real joy of using the program only works without disc. The names of the files are read from data line 1000, one for each letter of the alphabet but, as you can see, I have grouped some of mine together.

The number of files depends on the size of your collection. If you put much over 100 entries per file sorting becomes rather slow. The disc system in the program is for SuperDOS.

To READ the files requires no special explanation so I will move on to SORT mode. Up and down arrow keys display all the entries or pressing Ctrl Arrow up and down the file quickly displaying only when you remove your finger. Pressing 'D' deletes and entry while 'N' adds a new space. (Press 'and go to LIST is actually print the details.) 'P' prints out all subsequently displayed files and 'Q' turns the printer off. Pressing ' returns to the menu at the point at which you entered it while ' takes you back to the number you are displaying.

You do not have to put new entries in a particular slot. It is probably best to enter them first, then READ the appropriate file and then SORT. The sort routine only puts the composers' names in order but you could extend it although it might become rather slow. The routine can be seen to be working by the changing colour screens and partial printout.

Finally there is the ANALYSIS section. This is largely self explanatory from the instructions on the program. If you wish to modify this section for use with a single file on cassette may I draw your attention to the REM line 1000. The files for analysis are read direct from disc so you should save or clear (Y) any file already on the program before starting that section.

```

410 IF (C=R) THEN GOTO 430 ELSE GOTO 440
420 IF (C=P) THEN GOTO 450
430 KILLER="SOFTWARE OF TELETYPE (R)=R",P"
440 PRINT:GOTO 460
450 FOR C=0 TO 1
460 PRINT:GOTO 460
470 NEXT C
480 GOTO 490
490 CLS:GOTO 490
500 "READING DISC
510 CLS:PRINT:NOTE THAT THE NUMBER IN PARENS IS '1'
520 IF (C=R) THEN PRINT:GOTO 430 ELSE PRINT:GOTO 440
530 IF (C=P) THEN GOTO 450
540 GOTO 460
550 PRINT:GOTO 460
560 IF (C=R) THEN GOTO 430 ELSE GOTO 440
570 IF (C=P) THEN GOTO 450
580 IF (C=R) THEN GOTO 430 ELSE GOTO 440
590 IF (C=P) THEN GOTO 450
600 IF (C=R) THEN GOTO 430 ELSE GOTO 440
610 IF (C=P) THEN GOTO 450
620 IF (C=R) THEN GOTO 430 ELSE GOTO 440
630 IF (C=P) THEN GOTO 450
640 IF (C=R) THEN GOTO 430 ELSE GOTO 440
650 IF (C=P) THEN GOTO 450
660 IF (C=R) THEN GOTO 430 ELSE GOTO 440
670 IF (C=P) THEN GOTO 450
680 IF (C=R) THEN GOTO 430 ELSE GOTO 440
690 IF (C=P) THEN GOTO 450
700 IF (C=R) THEN GOTO 430 ELSE GOTO 440
710 IF (C=P) THEN GOTO 450
720 IF (C=R) THEN GOTO 430 ELSE GOTO 440
730 IF (C=P) THEN GOTO 450
740 IF (C=R) THEN GOTO 430 ELSE GOTO 440
750 IF (C=P) THEN GOTO 450
760 IF (C=R) THEN GOTO 430 ELSE GOTO 440
770 IF (C=P) THEN GOTO 450
780 IF (C=R) THEN GOTO 430 ELSE GOTO 440
790 IF (C=P) THEN GOTO 450
800 IF (C=R) THEN GOTO 430 ELSE GOTO 440
810 IF (C=P) THEN GOTO 450
820 IF (C=R) THEN GOTO 430 ELSE GOTO 440
830 IF (C=P) THEN GOTO 450
840 IF (C=R) THEN GOTO 430 ELSE GOTO 440
850 IF (C=P) THEN GOTO 450
860 IF (C=R) THEN GOTO 430 ELSE GOTO 440
870 IF (C=P) THEN GOTO 450
880 IF (C=R) THEN GOTO 430 ELSE GOTO 440
890 IF (C=P) THEN GOTO 450
900 IF (C=R) THEN GOTO 430 ELSE GOTO 440
910 IF (C=P) THEN GOTO 450
920 IF (C=R) THEN GOTO 430 ELSE GOTO 440
930 IF (C=P) THEN GOTO 450
940 IF (C=R) THEN GOTO 430 ELSE GOTO 440
950 IF (C=P) THEN GOTO 450
960 IF (C=R) THEN GOTO 430 ELSE GOTO 440
970 IF (C=P) THEN GOTO 450
980 IF (C=R) THEN GOTO 430 ELSE GOTO 440
990 IF (C=P) THEN GOTO 450

```



```

1500 IF A=0 THEN GOTO 1600
1510 PRINT "OK"
1520 GOTO 1550
1530 IF A=1 THEN GOTO 1550
1540 GOTO 1500
1550 IF A=2 THEN GOTO 1550
1560 IF A=3 THEN GOTO 1550
1570 IF A=4 THEN GOTO 1550
1580 IF A=5 THEN GOTO 1550
1590 IF A=6 THEN GOTO 1550
1600 END

```

[illegible][illegible]

Phoneticode

J F Rowles second-guesses spellings for sorting

THE successful operation of data files for key names and addresses, books and authors, record collections etc, is very dependent on the sort-keys used for retrieval of data. In most cases the surname is used as the primary key for retrieval. While this operates very successfully, instances do occur where lack of consistency of the exact spelling can result in repeated attempts of all known variants or a range selection being made. As an example, consider the variations found for "Smith". A perusal of my local telephone directory revealed the following possibilities: Smith, Smeeth, Smit, Smick, Smyth and Smytha. On a simple data base this would probably involve a separate search for each of the variants (assuming you are aware of all the possibilities) or a range selection of say SMAAA to SMZZZ, which of course will select all data commencing with the letters "SM", which on a large data base could be quite extensive.

A method much used by professional data base enquiry systems is to interrogate the files for phonetically similar names where the exact spelling is unknown, or alternatively to check initially for the believed correct spelling and if no match is found then resort to phonetics. This has much to commend it in that you may be making an enquiry using the correct spelling but the original data was entered incorrectly.

While this may seem a daunting prospect to expect the simple home main to perform such a task, it is in fact fairly easy to achieve. The system detailed below is modelled on one of the systems used in the professional data handling world. It should be realised that these systems are language controlled (ie, that is, not computer), and any program encoding will only work on the language for which it was designed

and to a lesser degree on similar languages and not at all on others.

Successful phonetic encoding necessarily requires the grouping of like-sounding letters together, as follows:

1. B/P/Y
2. C/G/J/K/S/X/Z
3. D/T
4. L
5. M/N
6. R

Try saying them phonetically, as a child does for used to in my day, twice first learning the alphabet. See the similarities?

The more astute will have realised that all the vowels together with Y, H and W are missing from the above groups. These are totally unnecessary for phonetic encoding and are ignored unless they are the first letter in the word or name. Try it yourself and see. Pick any word at random, write it down, pronounce it out loud, then rewrite the word omitting these letters and attempt to pronounce it. Unless you are very untidy the second word should be recognisable to the ear. This is the basis of phonetic encoding.

How to pre-allocate. The code is assembled by retaining the first letter of the name or word to be encoded as the first character of the code. Subsequent letters are tested for consecutive duplication, only the first occurrence being retained, and these letters are then assigned a numeric character according to which of the phonetic groups they belong. The whole code is then repeated for consecutive duplication and truncated or expanded by the addition of trailing zeros to four characters long. This then forms the phonetic code of that name or word.

This may sound complex, so consider the following example:

Name to be encoded = "SMITH"

Following the rules above the first character of the code will be the first letter of the name i.e. S. The second letter is not a duplicate of the first so use the look up chart above. M falls in group 5. This is the second character of the code. Likewise for the remaining letters, I is ignored, T is in group 3 and H is ignored. The code is therefore "SSS". This is expanded to four characters by the addition of trailing zeros, so the final phonetic code for "SMITH" is "SSSS". Try this for the other variants on the name "SMITH" mentioned previously, you will find that they all encode to "SSSS". So it works for "SMITH". How about other names? Try a few you can think of — you should be pleasantly surprised. Of course there are a few names that will defy these methods but these are usually of the more exotic or historical species. (By "CHALMORQUE" which is pronounced "CHUMLEY" — it does not produce a phonetic code which is compatible with its orthographic). However for the more common names and some unusual variants on spelling the encoding works well by "MAMMAMING" and "MAMMAMING" — the phonetic codes are identical.

Now to the programs themselves. The programming for the coding has been written as a sub-routine and in its existing form is ready to append to any program you may wish. The word or name to be encoded is IN\$ and the resulting Phoneticode is CODE\$. If you plan on using this system in any great degree it would be worth considering adding the phonetic codes of your principal sort keys to your main data base to speed selection. The second listing is merely a short program to append to the main listing so that you can experiment with different words and names to find the results.

If you operate a large data base you may find that truncation of the first code to four characters results in too many selections. The cure is simply to enlarge the size of the code to five or six characters long by making the appropriate alterations to lines 6015, 6016 and 6017.

The program has been kept simple deliberately to aid transportability between different machines (rumour has it that there are other machines than the Dragon, but as yet the author is not fully convinced).

As about the machine-code experts among you will re-write the Basic program, but the object of the article was more to expose thought and experimentation than to present a ready-made machine-code routine. The addition of one of the usual "speed-up" poles in the Basic program if your Dragon is suitable will be of great benefit to those planning to use it as it stands.

```

6000 *****
6001 **** PHONETIC ENCODING ****
6002 *****
6003 *** PHONETIC CODE: IN$ ***
6004 *** PHONETIC CODE: IN$ ***
6005 *** PHONETIC CODE: IN$ ***
6006 *** PHONETIC CODE: IN$ ***
6007 *****
6008 PHONETIC CODE: IN$
6009 IF IN$=IN$ THEN GOTO 6010 ELSE GOTO 6011
6010 FOR I=1 TO LEN(IN$)
6011   PHONETIC CODE: IN$
6012 NEXT I
6013 NEXT I
6014 NEXT I
6015 IF LEN(CODE$)=4 THEN CODE$=CODE$+IN$
6016 IF LEN(CODE$)=5 THEN CODE$=CODE$+IN$
6017 IF LEN(CODE$)=6 THEN CODE$=CODE$+IN$
6018 NEXT I
6019 IF IN$=IN$ THEN GOTO 6020 ELSE GOTO 6021
6020 IF IN$=IN$ THEN GOTO 6022 ELSE GOTO 6023
6021 IF IN$=IN$ THEN GOTO 6024 ELSE GOTO 6025
6022 IF IN$=IN$ THEN GOTO 6026 ELSE GOTO 6027
6023 IF IN$=IN$ THEN GOTO 6028 ELSE GOTO 6029
6024 IF IN$=IN$ THEN GOTO 6030 ELSE GOTO 6031
6025 IF IN$=IN$ THEN GOTO 6032 ELSE GOTO 6033
6026 IF IN$=IN$ THEN GOTO 6034 ELSE GOTO 6035
6027 IF IN$=IN$ THEN GOTO 6036 ELSE GOTO 6037
6028 IF IN$=IN$ THEN GOTO 6038 ELSE GOTO 6039
6029 IF IN$=IN$ THEN GOTO 6040 ELSE GOTO 6041
6030 IF IN$=IN$ THEN GOTO 6042 ELSE GOTO 6043
6031 IF IN$=IN$ THEN GOTO 6044 ELSE GOTO 6045
6032 IF IN$=IN$ THEN GOTO 6046 ELSE GOTO 6047
6033 IF IN$=IN$ THEN GOTO 6048 ELSE GOTO 6049
6034 IF IN$=IN$ THEN GOTO 6050 ELSE GOTO 6051
6035 IF IN$=IN$ THEN GOTO 6052 ELSE GOTO 6053
6036 IF IN$=IN$ THEN GOTO 6054 ELSE GOTO 6055
6037 IF IN$=IN$ THEN GOTO 6056 ELSE GOTO 6057
6038 IF IN$=IN$ THEN GOTO 6058 ELSE GOTO 6059
6039 IF IN$=IN$ THEN GOTO 6060 ELSE GOTO 6061
6040 IF IN$=IN$ THEN GOTO 6062 ELSE GOTO 6063
6041 IF IN$=IN$ THEN GOTO 6064 ELSE GOTO 6065
6042 IF IN$=IN$ THEN GOTO 6066 ELSE GOTO 6067
6043 IF IN$=IN$ THEN GOTO 6068 ELSE GOTO 6069
6044 IF IN$=IN$ THEN GOTO 6070 ELSE GOTO 6071
6045 IF IN$=IN$ THEN GOTO 6072 ELSE GOTO 6073
6046 IF IN$=IN$ THEN GOTO 6074 ELSE GOTO 6075
6047 IF IN$=IN$ THEN GOTO 6076 ELSE GOTO 6077
6048 IF IN$=IN$ THEN GOTO 6078 ELSE GOTO 6079
6049 IF IN$=IN$ THEN GOTO 6080 ELSE GOTO 6081
6050 IF IN$=IN$ THEN GOTO 6082 ELSE GOTO 6083
6051 IF IN$=IN$ THEN GOTO 6084 ELSE GOTO 6085
6052 IF IN$=IN$ THEN GOTO 6086 ELSE GOTO 6087
6053 IF IN$=IN$ THEN GOTO 6088 ELSE GOTO 6089
6054 IF IN$=IN$ THEN GOTO 6090 ELSE GOTO 6091
6055 IF IN$=IN$ THEN GOTO 6092 ELSE GOTO 6093
6056 IF IN$=IN$ THEN GOTO 6094 ELSE GOTO 6095
6057 IF IN$=IN$ THEN GOTO 6096 ELSE GOTO 6097
6058 IF IN$=IN$ THEN GOTO 6098 ELSE GOTO 6099
6059 IF IN$=IN$ THEN GOTO 6100 ELSE GOTO 6101
6060 IF IN$=IN$ THEN GOTO 6102 ELSE GOTO 6103
6061 IF IN$=IN$ THEN GOTO 6104 ELSE GOTO 6105
6062 IF IN$=IN$ THEN GOTO 6106 ELSE GOTO 6107
6063 IF IN$=IN$ THEN GOTO 6108 ELSE GOTO 6109
6064 IF IN$=IN$ THEN GOTO 6110 ELSE GOTO 6111
6065 IF IN$=IN$ THEN GOTO 6112 ELSE GOTO 6113
6066 IF IN$=IN$ THEN GOTO 6114 ELSE GOTO 6115
6067 IF IN$=IN$ THEN GOTO 6116 ELSE GOTO 6117
6068 IF IN$=IN$ THEN GOTO 6118 ELSE GOTO 6119
6069 IF IN$=IN$ THEN GOTO 6120 ELSE GOTO 6121
6070 IF IN$=IN$ THEN GOTO 6122 ELSE GOTO 6123
6071 IF IN$=IN$ THEN GOTO 6124 ELSE GOTO 6125
6072 IF IN$=IN$ THEN GOTO 6126 ELSE GOTO 6127
6073 IF IN$=IN$ THEN GOTO 6128 ELSE GOTO 6129
6074 IF IN$=IN$ THEN GOTO 6130 ELSE GOTO 6131
6075 IF IN$=IN$ THEN GOTO 6132 ELSE GOTO 6133
6076 IF IN$=IN$ THEN GOTO 6134 ELSE GOTO 6135
6077 IF IN$=IN$ THEN GOTO 6136 ELSE GOTO 6137
6078 IF IN$=IN$ THEN GOTO 6138 ELSE GOTO 6139
6079 IF IN$=IN$ THEN GOTO 6140 ELSE GOTO 6141
6080 IF IN$=IN$ THEN GOTO 6142 ELSE GOTO 6143
6081 IF IN$=IN$ THEN GOTO 6144 ELSE GOTO 6145
6082 IF IN$=IN$ THEN GOTO 6146 ELSE GOTO 6147
6083 IF IN$=IN$ THEN GOTO 6148 ELSE GOTO 6149
6084 IF IN$=IN$ THEN GOTO 6150 ELSE GOTO 6151
6085 IF IN$=IN$ THEN GOTO 6152 ELSE GOTO 6153
6086 IF IN$=IN$ THEN GOTO 6154 ELSE GOTO 6155
6087 IF IN$=IN$ THEN GOTO 6156 ELSE GOTO 6157
6088 IF IN$=IN$ THEN GOTO 6158 ELSE GOTO 6159
6089 IF IN$=IN$ THEN GOTO 6160 ELSE GOTO 6161
6090 IF IN$=IN$ THEN GOTO 6162 ELSE GOTO 6163
6091 IF IN$=IN$ THEN GOTO 6164 ELSE GOTO 6165
6092 IF IN$=IN$ THEN GOTO 6166 ELSE GOTO 6167
6093 IF IN$=IN$ THEN GOTO 6168 ELSE GOTO 6169
6094 IF IN$=IN$ THEN GOTO 6170 ELSE GOTO 6171
6095 IF IN$=IN$ THEN GOTO 6172 ELSE GOTO 6173
6096 IF IN$=IN$ THEN GOTO 6174 ELSE GOTO 6175
6097 IF IN$=IN$ THEN GOTO 6176 ELSE GOTO 6177
6098 IF IN$=IN$ THEN GOTO 6178 ELSE GOTO 6179
6099 IF IN$=IN$ THEN GOTO 6180 ELSE GOTO 6181
6100 IF IN$=IN$ THEN GOTO 6182 ELSE GOTO 6183
6101 IF IN$=IN$ THEN GOTO 6184 ELSE GOTO 6185
6102 IF IN$=IN$ THEN GOTO 6186 ELSE GOTO 6187
6103 IF IN$=IN$ THEN GOTO 6188 ELSE GOTO 6189
6104 IF IN$=IN$ THEN GOTO 6190 ELSE GOTO 6191
6105 IF IN$=IN$ THEN GOTO 6192 ELSE GOTO 6193
6106 IF IN$=IN$ THEN GOTO 6194 ELSE GOTO 6195
6107 IF IN$=IN$ THEN GOTO 6196 ELSE GOTO 6197
6108 IF IN$=IN$ THEN GOTO 6198 ELSE GOTO 6199
6109 IF IN$=IN$ THEN GOTO 6200 ELSE GOTO 6201
6110 IF IN$=IN$ THEN GOTO 6202 ELSE GOTO 6203
6111 IF IN$=IN$ THEN GOTO 6204 ELSE GOTO 6205
6112 IF IN$=IN$ THEN GOTO 6206 ELSE GOTO 6207
6113 IF IN$=IN$ THEN GOTO 6208 ELSE GOTO 6209
6114 IF IN$=IN$ THEN GOTO 6210 ELSE GOTO 6211
6115 IF IN$=IN$ THEN GOTO 6212 ELSE GOTO 6213
6116 IF IN$=IN$ THEN GOTO 6214 ELSE GOTO 6215
6117 IF IN$=IN$ THEN GOTO 6216 ELSE GOTO 6217
6118 IF IN$=IN$ THEN GOTO 6218 ELSE GOTO 6219
6119 IF IN$=IN$ THEN GOTO 6220 ELSE GOTO 6221
6120 IF IN$=IN$ THEN GOTO 6222 ELSE GOTO 6223
6121 IF IN$=IN$ THEN GOTO 6224 ELSE GOTO 6225
6122 IF IN$=IN$ THEN GOTO 6226 ELSE GOTO 6227
6123 IF IN$=IN$ THEN GOTO 6228 ELSE GOTO 6229
6124 IF IN$=IN$ THEN GOTO 6230 ELSE GOTO 6231
6125 IF IN$=IN$ THEN GOTO 6232 ELSE GOTO 6233
6126 IF IN$=IN$ THEN GOTO 6234 ELSE GOTO 6235
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6128 IF IN$=IN$ THEN GOTO 6238 ELSE GOTO 6239
6129 IF IN$=IN$ THEN GOTO 6240 ELSE GOTO 6241
6130 IF IN$=IN$ THEN GOTO 6242 ELSE GOTO 6243
6131 IF IN$=IN$ THEN GOTO 6244 ELSE GOTO 6245
6132 IF IN$=IN$ THEN GOTO 6246 ELSE GOTO 6247
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6134 IF IN$=IN$ THEN GOTO 6250 ELSE GOTO 6251
6135 IF IN$=IN$ THEN GOTO 6252 ELSE GOTO 6253
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6157 IF IN$=IN$ THEN GOTO 6296 ELSE GOTO 6297
6158 IF IN$=IN$ THEN GOTO 6298 ELSE GOTO 6299
6159 IF IN$=IN$ THEN GOTO 6300 ELSE GOTO 6301
6160 IF IN$=IN$ THEN GOTO 6302 ELSE GOTO 6303
6161 IF IN$=IN$ THEN GOTO 6304 ELSE GOTO 6305
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6212 IF IN$=IN$ THEN GOTO 6406 ELSE GOTO 6407
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6215 IF IN$=IN$ THEN GOTO 6412 ELSE GOTO 6413
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6240 IF IN$=IN$ THEN GOTO 6462 ELSE GOTO 6463
6241 IF IN$=IN$ THEN GOTO 6464 ELSE GOTO 6465
6242 IF IN$=IN$ THEN GOTO 6466 ELSE GOTO 6467
6243 IF IN$=IN$ THEN GOTO 6468 ELSE GOTO 6469
6244 IF IN$=IN$ THEN GOTO 6470 ELSE GOTO 6471
6245 IF IN$=IN$ THEN GOTO 6472 ELSE GOTO 6473
6246 IF IN$=IN$ THEN GOTO 6474 ELSE GOTO 6475
6247 IF IN$=IN$ THEN GOTO 6476 ELSE GOTO 6477
6248 IF IN$=IN$ THEN GOTO 6478 ELSE GOTO 6479
6249 IF IN$=IN$ THEN GOTO 6480 ELSE GOTO 6481
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6251 IF IN$=IN$ THEN GOTO 6484 ELSE GOTO 6485
6252 IF IN$=IN$ THEN GOTO 6486 ELSE GOTO 6487
6253 IF IN$=IN$ THEN GOTO 6488 ELSE GOTO 6489
6254 IF IN$=IN$ THEN GOTO 6490 ELSE GOTO 6491
6255 IF IN$=IN$ THEN GOTO 6492 ELSE GOTO 6493
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6263 IF IN$=IN$ THEN GOTO 6508 ELSE GOTO 6509
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6285 IF IN$=IN$ THEN GOTO 6552 ELSE GOTO 6553
6286 IF IN$=IN$ THEN GOTO 6554 ELSE GOTO 6555
6287 IF IN$=IN$ THEN GOTO 6556 ELSE GOTO 6557
6288 IF IN$=IN$ THEN GOTO 6558 ELSE GOTO 6559
6289 IF IN$=IN$ THEN GOTO 6560 ELSE GOTO 6561
6290 IF IN$=IN$ THEN GOTO 6562 ELSE GOTO 6563
6291 IF IN$=IN$ THEN GOTO 6564 ELSE GOTO 6565
6292 IF IN$=IN$ THEN GOTO 6566 ELSE GOTO 6567
6293 IF IN$=IN$ THEN GOTO 6568 ELSE GOTO 6569
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6301 IF IN$=IN$ THEN GOTO 6584 ELSE GOTO 6585
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6309 IF IN$=IN$ THEN GOTO 6600 ELSE GOTO 6601
6310 IF IN$=IN$ THEN GOTO 6602 ELSE GOTO 6603
6311 IF IN$=IN$ THEN GOTO 6604 ELSE GOTO 6605
6312 IF IN$=IN$ THEN GOTO 6606 ELSE GOTO 6607
6313 IF IN$=IN$ THEN GOTO 6608 ELSE GOTO 6609
6314 IF IN$=IN$ THEN GOTO 6610 ELSE GOTO 6611
6315 IF IN$=IN$ THEN GOTO 6612 ELSE GOTO 6613
6316 IF IN$=IN$ THEN GOTO 6614 ELSE GOTO 6615
6317 IF IN$=IN$ THEN GOTO 6616 ELSE GOTO 6617
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6332 IF IN$=IN$ THEN GOTO 6646 ELSE GOTO 6647
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6340 IF IN$=IN$ THEN GOTO 6662 ELSE GOTO 6663
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6342 IF IN$=IN$ THEN GOTO 6666 ELSE GOTO 6667
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6359 IF IN$=IN$ THEN GOTO 6700 ELSE GOTO 6701
6360 IF IN$=IN$ THEN GOTO 6702 ELSE GOTO 6703
6361 IF IN$=IN$ THEN GOTO 6704 ELSE GOTO 6705
6362 IF IN$=IN$ THEN GOTO 6706 ELSE GOTO 6707
6363 IF IN$=IN$ THEN GOTO 6708 ELSE GOTO 6709
6364 IF IN$=IN$ THEN GOTO 6710 ELSE GOTO 6711
6365 IF IN$=IN$ THEN GOTO 6712 ELSE GOTO 6713
6366 IF IN$=IN$ THEN GOTO 6714 ELSE GOTO 6715
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6383 IF IN$=IN$ THEN GOTO 6748 ELSE GOTO 6749
6384 IF IN$=IN$ THEN GOTO 6750 ELSE GOTO 6751
6385 IF IN$=IN$ THEN GOTO 6752 ELSE GOTO 6753
6386 IF IN$=IN$ THEN GOTO 6754 ELSE GOTO 6755
6387 IF IN$=IN$ THEN GOTO 6756 ELSE GOTO 6757
6388 IF IN$=IN$ THEN GOTO 6758 ELSE GOTO 6759
6389 IF IN$=IN$ THEN GOTO 6760 ELSE GOTO 6761
6390 IF IN$=IN$ THEN GOTO 6762 ELSE GOTO 6763
6391 IF IN$=IN$ THEN GOTO 6764 ELSE GOTO 6765
6392 IF IN$=IN$ THEN GOTO 6766 ELSE GOTO 6767
6393 IF IN$=IN$ THEN GOTO 6768 ELSE GOTO 6769
6394 IF IN$=IN$ THEN GOTO 6770 ELSE GOTO 6771
6395 IF IN$=IN$ THEN GOTO
```

Expert's Arcade Arena

Written by 'The Expert' of Dragon User
49 Alexandra Road
Hounslow, Middlesex, TW2 4XP

HELLO DEEPS, and welcome to the second games round-up, which feature almost all of the arcade games which are still readily available from third party sources, and were not included in the original round up.

The first dozen are available from Compupipe (don't forget the new address, The Love's Docket from John Pank, and the last

five are available from Precision.

The original format has been used again, with all marks out of five, with three being the ideal speed. The overall rating is an indicator of how necessary the program is to a hardened games player.

As for categories, well, shooters-up games require an idly trigger finger, collection games are for blase' clever func-

tion clones, strategy games require a bit more thought than Da Amnrag Game, Run-Box, boy, and as for adventure and sport games, well, you can mark that out for yourself.

There's no room for games this time, but you can look forward to the Superstix cheat codes and a few more, so now my time is up, I'll bug off, well.

Title	Graphics	Speed	Type	Comment	Rating
Arball	5	3	Adventure	Ed Scio's conversion is now a big hit on the Atari as well.	5
Space Week	5	2	Shoot 'em up	A mixture of Rastexone and Asteroids which claims a peer second to Rastex-20.	5
Tanglewood	4	—	Adventure	Not being strictly an arcade game, this will have to receive an average rating, although it is very popular.	3
Junior's Revenge	3	3	Collection	The King 2 — city Mario has changed his name to Luigi, and is now the badde.	2
Time Bandit	3	4	Adventure	One of the first Dragon arcade adventures, which has stood the test of time.	4
Cutthroat and the Golden Chalice	2	3	Collection	A simple but quite enjoyable obstacle-course game.	2
Pinball	2	2	Strategy	An unbelievably easy game which is unfortunately the only one of its kind for the Dragon.	0
Fire Force	4	4	Shoot 'em up	What more can I say.	1
Indoor Football	5	3	Sport	Without a doubt the best football game on the Dragon.	5
Superjet	5	3	Collection	A faithful copy of the arcade classic undercity, which was Mayas Smithson's best.	5
Screaming Abolite	4	3	Collection	The hardest Mario Minst clone that I've played.	3
Crusy Foots II and II	2	1-5	Sport	Great fun, and especially good in the two players mode.	3
Tim Lovers Cricket	5	1	Sport	Totally realistic cricket game which is as boring as the real thing.	2
Poleball	4	4	Adventure	Buy it now that the bug has been sorted out.	5
Boulder Dash	4	3	Collection	Better than Microdeal's Stone Raster II, with the added advantage of extra screens from Paul Burgh.	4
The Balls	1	5	Collection	A hunchback type game which, due to its shoot speed, is impossible to play with a joystick.	1
Bugliver	2	3	N/A	A mediocre Frogger clone which is the only one of its type still available from the several which were made.	1
Wegas Jackpot	3	—	N/A	This game was co-written many years ago by Jason Orban. Good but a bit slower than the money-getting machines.	2


```

3140 A=PPRINT (X,Y)=128+PPRINT (X,Y+1)+64+PPRINT (X,Y+2)+32+PPRINT (X,Y+3)+16+PPRINT
(X,Y+4)+8+PPRINT (X,Y+8)+4+PPRINT (X,Y+16)+2+PPRINT (X,Y+32)+PPRINT (X,Y+64)
3150 IF A=255 THEN A=0:GOTO 3170
3160 PRINT A-2,CHR$(A):NEXT
3170 PRINT A-2,CHR$(16)
3180 Y=Y+8:IF Y=191 THEN GOTO 3110
3190 PRINT A-2,CHR$(7) ; " " ; CHR$(16)
3200 PRINT A-2:PRINT A-2, TAB (5) "PLotted USING EQUIVALENT CARTESIAN CO-ORDINATES"
      @RCO=0:ND ,R=63:0:ND:1"
3210 PRINT:PRINTAB (7) "PRINTING COMPLETED"
3220 PRINT:PRINTAB (2) "PRESS REQUIRED KEY IF s/p=0x16"
3230 RETURN
3240 REM VIEW DIRECTORY
3250 CLS
3260 PRINTAB (6) "VIEW DIRECTORY"
3270 PRINTAB (6) STR$(M)A,450:PRINT
3280 GOSUB 2540
3290 GOTO 3110 IF PEEK (1942)=CHR$(17) AND P<0 THEN 3310 ELSE IF PEEK (1942)=CHR$(17)
      AND P=0 THEN 3340
3300 K=INDEX:IF K="" THEN 3300 ELSE 3390
3310 PRINTAB (2) "PRESS THE SPACEBAR TO PROCEED"
3320 K=INDEX:IF K="" OR K<CHR$(32) THEN 3330
3330 CLS:RETURN
3340 PRINTAB (2) "PRESS REQUIRED KEY IF s/p=0x16"
3350 RETURN
3360 REM TUTORIAL
3370 PSET 4,1:SCREEN 1,1:CLS:COLOR 0,1
3380 SC=0:GOSUB 1090:MM=C0=0
3390 Y=105+50*Y%+10:SC=MM+50:GOTO
3400 MM=POLAR (COORDINATES) - TUTORIAL"
3410 GOSUB 1110:GOSUB 1150:GOSUB 1190:R=0:Y=11
3420 MM="Polar Coordinates is a method by which the location of a given point P is
      in the plane may be defined. Necessitate with one Axis and a point on it called the
      Pole."
3430 GOSUB 1150
3440 LINE (95,174)-(170,174),PSET
3450 FOR T=1 TO 5
3460 CIRCLE (95,174),60,1,0,0,90:WAIT 150
3470 CIRCLE (95,174),60,1,1,0,90,1:WAIT 150
3480 NEXT T:MM=0:GOTO 3
3490 MM="A point in the plane is now represented by pair of numbers (R,Z), where
      R denotes its distance from the Pole"
3500 GOSUB 1190:TX=X:TY=Y
3510 R=152:Y=127:MM="(R,Z)" :GOSUB 1150
3520 X=114:Y=143:MM="(R)" :GOSUB 1150:X=TX:Y=TY
3530 FOR T=1 TO 5
3540 LINE (95,174)-(170,134),PSET:WAIT 150
3550 LINE (95,174)-(150,134),PSET:WAIT 150
3560 NEXT
3570 MM="and Z is the angle formed between the x-axis and the line from the Pole to
      this point. This angle being measured anticlockwise if Z is positive or clockwise
      if Z has a negative value."
3580 GOSUB 1150:TX=X:TY=Y
3590 X=150:Y=166:MM="(R,Z)" :GOSUB 1150:X=TX:Y=TY
3600 FOR T=1 TO 5
3610 CIRCLE (95,174),10,1,1,0,90,1:WAIT 150
3620 CIRCLE (95,174),10,0,1,0,90,1:WAIT 150
3630 NEXT
3640 MM="However, R is always taken as positive. We write P=(R,Z). The symbol ""
      standing for "" is uniquely defined by""
3650 GOSUB 1150:GOSUB 3660:GOTO 3660
3660 Y=191:MM="PRESS THE SPACEBAR TO CONTINUE":GOSUB 1150:GOSUB 1190:GOSUB 1130
3670 K=INDEX:IF K="" OR K<CHR$(32) THEN 3670 ELSE RETURN
3680 GOSUB 3690:GOTO 3710
3690 PCL=1:Y=1:MM="TUTORIAL, CONTINUED":GOSUB 1110:GOSUB 1150:GOSUB 1130
3700 X=0:Y=1:RETURN
3710 MM="It will be seen that if either or both of these coordinates are changed,
      then the location of point P will also change accordingly, as in the folloiw
      necessitate:="

```

```

3750 GOSUB 1150:Y=Y+98:X=X-7
3760 LINE 120,120+1170,120+1567,PSET:WAIT 150
3780 RR="P1" (2.5,350):GOSUB 3860
3790 LINE 120,120+1170,941,PSET
3810 X=174:Y=80:RR="P1":GOSUB 3870
3870 RR="P2" (3.8,150):GOSUB 3860
3880 LINE 120,120+1192,961,PSET
3890 X=84:Y=80:RR="P2":GOSUB 3870
3900 RR="P3" (5.2248):GOSUB 3860
3910 LINE 120,120+162,169,PSET
3920 X=55:Y=144:RR="P3":GOSUB 3870
3930 RR="P4" (2.3,-440):GOSUB 3860
3940 LINE 120,120+1164,157,PSET
3950 X=144:Y=153:RR="P4":GOSUB 3870:GOTO 3980
3960 GOSUB 1150:GOSUB 1130:TOX:TRY:RETURN
3970 GOSUB 1150:X=TOX:Y=TRY:WAIT 1000:RETURN
3980 GOSUB 3860:GOSUB 3870
3990 RR="A function that involves Polar Coordinates (R,Z) is called a"
4000 GOSUB 1150:X=X+30
4010 RR="POLAR FUNCTION." :GOSUB 1150:GOSUB 1130:X=X+60
4020 RR="For instance, R=SIN Z is a Polar Function. Substituting this example in
a generic formula, P(R,Z), would give us P(SIN Z),Z."
4030 GOSUB 1150:X=X+75
4040 RR="To draw the graph of a Polar Function, we take each value of Z in some
specified range, and use this tablet to plot the point P(R,Z) using Polar Coordinates."
4050 GOSUB 1150:X=X+75:Y=Y+20
4060 RR="To make the plotting easier the program substitutes"
4070 GOSUB 1150:X=X+60
4080 RR="CARTESIAN COORDINATES":GOSUB 1150:GOSUB 1130:X=X+60
4090 RR="in its calculations, which is the more usual method of representing points
in a plane. The point (R,Z) in Polar Coordinates is the equivalent of (RxCOS
Z),RxDIN Z) in Cartesian Coordinates, and this is what we plot."
4100 GOSUB 1150:GOSUB 3860:GOSUB 3870
4110 RR="Many interesting & complex patterns can be produced if instead of using
the basic Cartesian Coordinates (RxCOS Z),RxDIN Z), we now introduce two additional
strainers, (R,Z) & plot (RxCOS (R+Z),RxDIN (R+Z))."
4120 GOSUB 1150:X=X+90:Y=Y+20
4130 RR="If both R & Z are given a value of 1, the program will calculate & display
the STANDARD PLOT of the chosen function. Assigning any other values to R and/or
Z will result in some quite spectacular and beautiful variations."
4140 GOSUB 1150
4150 Y=Y+50:X=X+GOSUB 1090
4160 RR="TUTORIAL, ENDLESS":GOSUB 1110:GOSUB 1130:GOSUB 1130
4170 Y=Y+50:X=X+GOSUB 1090
4180 RR="PRESS ESC/END KEY TO PLPLOT":GOSUB 1110:GOSUB 1130:GOSUB 1130

```

```

4190 RETURN
4200 REM FORMULAE
4210 DATA SIN (2*Z)
4220 DEF FNA(Z)=SIN (2*Z):RETURN
4230 DATA SIN (3*Z)
4240 DEF FNA(Z)=SIN (3*Z):RETURN
4250 DATA SIN (4*Z)
4260 DEF FNA(Z)=SIN (4*Z):RETURN
4270 DATA SIN (5*Z)
4280 DEF FNA(Z)=SIN (5*Z):RETURN
4290 DATA SIN (6*Z)
4300 DEF FNA(Z)=SIN (6*Z):RETURN
4310 DATA SIN (7*Z)
4320 DEF FNA(Z)=SIN (7*Z):RETURN
4330 DATA SIN (8*Z)
4340 DEF FNA(Z)=SIN (8*Z):RETURN
4350 DATA SIN (9*Z)
4360 DEF FNA(Z)=SIN (9*Z):RETURN
4370 DATA SIN (10*Z)
4380 DEF FNA(Z)=SIN (10*Z):RETURN
4390 DATA SIN (11*Z)
4400 DEF FNA(Z)=SIN (11*Z):RETURN
4410 DATA SIN (12*Z)
4420 DEF FNA(Z)=SIN (12*Z):RETURN
4430 DATA SIN (13*Z)
4440 DEF FNA(Z)=SIN (13*Z):RETURN
4450 DATA SIN (14*Z)
4460 DEF FNA(Z)=SIN (14*Z):RETURN
4470 DATA SIN (15*Z)
4480 DEF FNA(Z)=SIN (15*Z):RETURN
4490 DATA SIN (16*Z)
4500 DEF FNA(Z)=SIN (16*Z):RETURN

```

```

4260 DEF FNA(Z)=1+SIN (6*Z):RETURN
4270 DATA 1+SIN (7*Z)
4280 DEF FNA(Z)=1+SIN (7*Z):RETURN
4290 DATA 1+SIN (8*Z)
4300 DEF FNA(Z)=1+SIN (8*Z):RETURN
4310 DATA 1+COS (Z)
4320 DEF FNA(Z)=1+COS (Z):RETURN
4330 DATA 1+COS (Z)
4340 DEF FNA(Z)=1+COS (Z):RETURN
4350 DATA 2/3
4360 DEF FNA(Z)=2/3:RETURN
4370 DATA 1+COS (Z)+Z
4380 DEF FNA(Z)=1+COS (Z)+Z:RETURN
4390 DATA 1+COS (R+Z)
4400 DEF FNA(Z)=1+COS (R+Z):RETURN
4410 DATA 1+COS (7*Z)
4420 DEF FNA(Z)=1+COS (7*Z):RETURN

```

Continued from page 21
(providing extended forwards and backwards paging).

Lines 3170-3240 I needed a way of labeling the graphs for disc storage and retrieval. Using the actual formulas was not possible as they contain more than eight characters. Likewise, trying to invent descriptive formulas proved to be a non-starter. Using identity numbers was the only viable alternative/could think of.

Line 2440 If the standard, as opposed to an enhanced, plot collection has been chosen, this line PRINTS a single, uninformative plot, so that when the graph is printed, Line 3040 will print the appropriate heading.

Lines 2910-3030 Hard copy if required, printer instructions are for a Brother Hi-8 printer. Also the screen dump commencing at line 3030 to suit your computer. If you have a machine code routine, so much the better. Better still, if you have a copy of MacDraw's Dump program, you could save a copy of the screen dump and print it with this routine to call it up from within the main program when a screen-dump was required.

Lines 3050-3090 Access the disk directory. A single-drive system has been assumed, but the routine can easily be altered to a twin-drive system, if required. My own

system has a SuperDisk E-4 controller, which allows the directory to be viewed a scroll at a time, indicating that extra items are to follow by printing the word MORE! towards the bottom-right corner of the screen. By PRESSING arrow keys (line 3080) you ascertain whether the first letter of MORE! is present or not, the program either loops back to the next page of the directory or according to the value of R returns to the current sub-menu or to the Help screen. If your own system has a different controller, this routine will probably be of more use to you in its present form, and will require re-writing as necessary.

Lines 3030-4030 Tutorial. It is essential that the print strings are typed in exactly as shown, otherwise the text will not be printed correctly.

Lines 4130-4420 Formulas. These lines are paired. The first lines of each pair write data statements which are read by line 1030 for display in the functions library.

The second lines contain the equivalent defined functions for use in the actual plotting. Incidentally, does anyone know of a method by which one can line input defined functions directly while a program is running?

If the thought of that typing daunts you, I can supply copies of the program at the following rates, inclusive of postage and packaging: on disc supplied by me £5.00, on disc supplied by purchaser £3.00, on cassette supplied by me £4.00, on cassette supplied by purchaser £3.00. Cheques, etc to K. Redford, 21 Raxter Avenue, Newmarket upon Tyne NE4 9QD.

Finally, the program has been carefully tested and is bug-free to the best of my belief. However, if anyone with greater expertise than myself would like to write in with suggestions for improving my programming techniques, I am willing to learn and thank you in advance.



FIGURE 1: A complex geometric pattern, possibly a fractal or a mathematical plot, with various lines and points labeled.

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Problem

.....

Name

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.....

Dragon Answers

If you've got a technical question write to Brian Cattee. Please do not send a SAE as Brian cannot guarantee to answer individual enquiries.

Seek for the Answer

I own a Tandy 101 with disc drive and OS-9. Reading the OS-9 manual, it mentions the possibility of using tapes. This would be ideal for quick backups and may be the chance of communicating with another Dragon while running OS-9.

G. Moss
63 Pittycombe Road
Preston
Cheshire
WA9 2DA

WHAT you need is an OS-9 device driver for the cassette system. One appeared in the March 1988 issue of DR. You'll need an assembler and after knowledge of OS-9 to use it. Alternatively, perhaps someone knows of available drivers for OS-9 (public domain) and will let us know.



Pin No.

10
12
14
16

Dragon
Drive 1 Select
Drive 2 Select
-
Motor On

IBM clone

I have been thinking of getting the Dragon 32 (386) system. I have a spare IBM PC supply drive of 300K and I have been wondering which disc controller I will need to use it with the Dragon. Can you tell me which Dragon specific operating system is the closest to IBM PC-DOS?

John Edwards
32 Chesham Road
Wotton
Oxford

IBM
Motor Enable A
Drive Select B
Drive Select A
Motor Enable B

Every which way but Left . . .

COULD you please tell me if there is a fairly simple machine code routine for scrolling the screen left one column at a time?

I have routines for scrolling the screen in the other three directions, but cannot complete the program I am writing without left-scroll.

U R Smith
P A River Street
Worcester
WR1 2AF

THE following routine will do the trick. It is relocatable, so just POINT the code to the address in left column whenever you want and EXEC at that address.

OS-9 driver

I own a Dragon 32 computer with a Dragon Data disc drive and recently a fault has developed in the DOS. When I use any command such as DIR, the drive indicator light comes on and the DOS code is reported. My manual doesn't explain the meaning or cause of this error.

Is this a fault with the controller or drive and could it be rectified by buying SuperDOS-386?

Steve Menzies
24 Adelaide Crescent
Peytoford
Barnet
RG2 9BAK

THE pin connections of a PC drive are almost identical to those specified by DragonDOS (and therefore any compatible cartridge controller). That is, all add numbered pins are Ground, pin 16 'Index' through to pin 32 which is 'select head 1'.

The only differences are in pins 10, 12, 14 and 16. You'll probably find that for a single drive no connectors need be made. FSP manufacturers estimate disc controller cartridges, which are available from Bob Harris at his usual address (check for price and availability). As far as Dragon OSs are concerned, it is a choice between FLEX and OS-9. Neither is much like MSDOS, but OS-9 is probably nearer in structure (used by the computers from FLEX onwards again).

SCROLL TEXT LEFT

```

8C 04 00      LDX  $1034
C6 1F        LOOP1: LDB  $31
A6 01        LOOP2: LDA  1,X
A7 80        STA  ,X+
5A          DECB
36 F9        BNE  LOOP2
66 60        LDA  $96
A7 80        STA  ,X+
8C 05 03     CMPEQ $1036
35 EE        BLO  LOOP1
39          RTS
    
```

THE '36' error checks for disk error. This occurs when the drive controller chip's request line sees for more than one of the 40 tracks on a disc fails. This could be due to a fault in the controller cartridge, or more likely to the drive itself. Occasionally a cartridge connector is loose (by removing the cartridge and cleaning the contacts with isopropyl alcohol), available from the pharmacy counter at chemists.

If this has no effect, you'll need to get your drive serviced. In any case, replacing the DragonDOS system with a SuperDOS system will not help.

Recurring DREAMs

FINALLY, a note on the perennial saving source code from Dream. It seems many of you have the same problem and all say the various patches published on networks — well, it doesn't work. There are one or two that claim to be different versions of Dream in circulation. The patches do work, but only on the most common version. Watch this space...